



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,156	11/24/2003	Raj B. Apte	D/A3536	6774

7590 02/05/2008
Patent Documentation Center
Xerox Corporation
Xerox Sqzre 20th Floor
100 Clinton Ave. S.
Rochester, NY 14644

EXAMINER

WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

02/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/722,156

Applicant(s)

APTE ET AL.

Examiner

Monique M. Wills

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 and 39 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35 and 38 is/are allowed.
- 6) ☒ Claim(s) 27-34, 36, 37 and 40-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/24/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed November 16, 2007. The objection of claims 27 and 35 are overcome. The rejection of claims 27-38 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn.

Allowable Subject Matter

Claims 35 & 38 are allowed. The instant claims are allowable over the prior art of record, because the prior art is silent to a fuel cell comprising an electrolyte with an anode and cathode on a first side thereof, wherein anode and cathode bends are approximately 90 degrees (claim 38) or exceeds 90 degrees but less than 180 degrees (claim 35).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

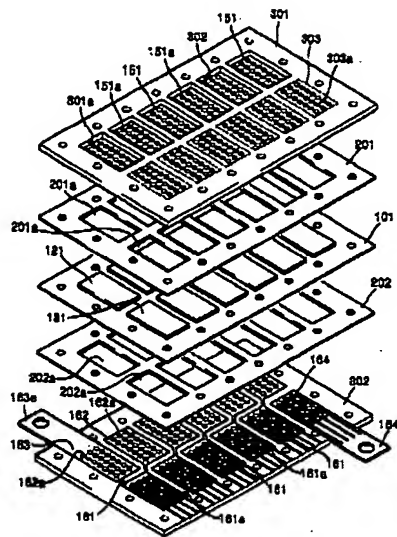
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-29 & 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi U.S. Patent 6,689,502.

With respect to claim 27, Choi teaches a fuel cell comprising: an electrolyte (col. 8, lines 25-35) having a first side; a manifold cover (201) that is in contact with the electrolyte (101), the manifold cover (201) and electrolyte (101) together form two manifolds, a first manifold including an anode (121), and a second manifold including the cathode (131), wherein the two manifolds are both on the first side of the electrolyte. See Figure 9.

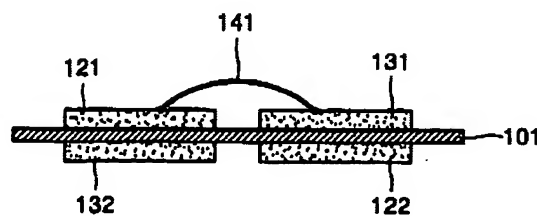
FIG. 9



With respect claim 28, the fuel cell includes a fuel in the first chamber; and oxidizer in the second chamber. See column 5, lines, 55-65.

With respect to claims 29 & 32, the anode (121) and the cathode (131) are in a first plane, the first plane is approximately parallel to the first side of the electrolyte (101). See Figure 6.

FIG. 6



Therefore, Choi anticipates the instant claims.

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-29, 32, 34 & 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Potter et al. U.S. Pub. 2004/0115507.

With respect to claim 27, Potter teaches a fuel cell 200 comprising: an electrolyte (225) having a first side; a manifold cover (205) that is in contact with the electrolyte (225), the manifold cover (205) and electrolyte (225) together form two manifolds, a first manifold including an anode (215), and a second manifold including the cathode (210), wherein the two manifolds are both on the first side of the electrolyte. See Figure 2, and paragraph 49.

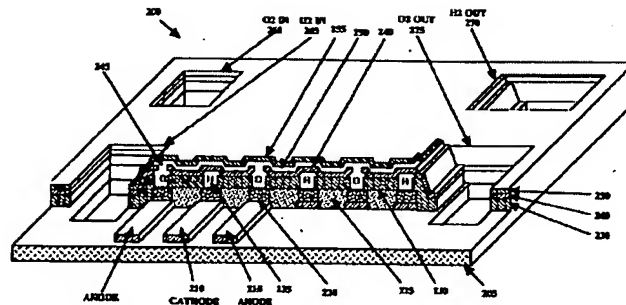


FIG. 1

With respect claim 28, the fuel cell includes a fuel in the first chamber; and oxidizer in the second chamber. See paragraph 52.

With respect to claims 29 & 32, the anode (121) and the cathode (131) are in a first plane, the first plane is approximately parallel to the first side of the electrolyte (101). See Figure 2.

With respect to claim 34, the first side of the electrolyte (225) includes a first indentation and a second indentation, wherein each include an anode and cathode, respectively. See Figure 2 and paragraph 49.

With respect to claim 36, the manifold cover is in contact with an edge of the electrolyte indentations containing electrodes. See Figure 2 and paragraph 49.

Therefore, Potter anticipates the instant claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30, 31, 33 & 37, 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi U.S. Patent 6,689,502.

Choi teaches a fuel cell as set forth in the rejection recited hereinabove. With respect to claim 30, Choi teaches the manifold separating the cathode from the anode with a perpendicular section.

However, Choi does not expressly disclose: the perpendicular section separating the electrodes by less than 1000 micrometers; the distance between the edge of the electrodes furthest from the perpendicular section being approximately the sum of (1) the distance separating the closest points on the anode the cathode and (2) the width of the cathode and (3) the width of the anode ; thickness of the electrolyte exceeding 10 micrometers and a distance

Art Unit: 1795

separating at least one point on the anode and cathode less than 50 micrometers

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the perpendicular section to separate the electrodes by less than 1000 micrometers, because such a modification would have a change in size of the manifold section (claim 30). A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to claim 31, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant distance between the edge of the electrodes furthest from the perpendicular section, because such a modification would have a change in size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to claims 33 & 37, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant electrolyte thickness, because such a modification would have a change in size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). With respect to the instant distance between electrode, such an

Art Unit: 1795

arrangement is obvious, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33 & 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter et al. U.S. Pub. 2004/0115507.

Potter a fuel cell as describing in the rejection recited hereinabove.

However, Potter does not expressly disclose the thickness of the electrolyte exceeding 10 micrometers and a distance separating at least one point on the anode and cathode less than 50 micrometers (claims 33 & 37).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant electrolyte

Art Unit: 1795

thickness, because such a modification would have a change in size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). With respect to the instant distance between electrode, such an arrangement is obvious, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Response to Arguments

Applicant contends that Choi and Potter does not anticipate and are not obvious over the instant claims because the reference are silent to electrodes on one side of the electrolyte, wherein there is an ionic exchange. This argument is not persuasive. It is reasonable to expect that the electrodes on one side of the electrolyte as taught by both Choi and Potter have ionic exchange across the adjacent electrodes through the electrolyte. The Examiner recognizes ionic exchange across the electrolyte taught by the references, but it is reasonable to expect some ionic exchange from adjacent electrodes as the adjacent electrodes are over opposite polarity. Therefore, the rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Art Unit: 1795


If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

2/3/08


PATRICK J. RYAN
SUPERVISOR, PATENT EXAMINER